Efficacy and appropriate use of electronic assessment techniques for computing subjects

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Efficacy & appropriate use of electronic assessment techniques for computing subjects

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Background

Following the 2008 National Student Survey results, an investigation into the underlying reasons for low satisfaction with assessment and feedback amongst computing students was warranted.

Aims of the project

- To assess how innovative assessment and feedback tools can be designed to satisfy both the learning needs of students and the pedagogical requirements of staff, based on the evidence gained from this project.
- To test the validity of electronic methods of assessment in terms of student perceptions of impact on their learning.
- To assess the impact on staff in terms of perceptions and usefulness, and impact on workloads.
- For staff to critically consider how existing and innovative practice impacts on their relationship with students.
- To develop evidence-based guidance on appropriate use of such assessment tools for implementation across the subject group, and the wider Information and Computer Science Community.

Method

The following methods of investigation were utilised for this research:

- An audit of course documentation and student feedback data.
- A questionnaire for students on phase tests.
- Interviews with staff members who create and run the tests.

Why is this important?

E-assessment can:

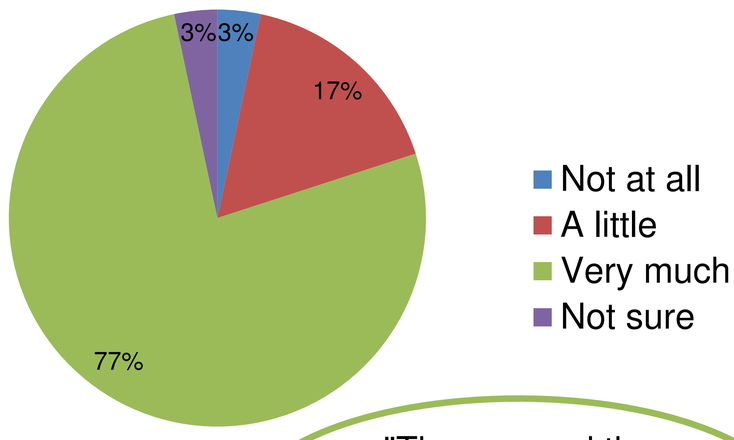
- Enhance the student learning experience through assessment of learning, feedback and motivation students (Marriot 2009).
- Support teaching and assessment paradigms by providing performance indicators for/of staff and students (Marriot 2009).
- Provide easy access, analysis and insight into the depth of student learning facilitated through different learning strategies (Nortcliffe 2005).
- Increase efficiencies, accuracy and data management of marking (Hamilton and Shoen 2005), as well as reducing the workload burden on the academic.

Outcomes

Students:

"I think most tests should be produced like phase tests"

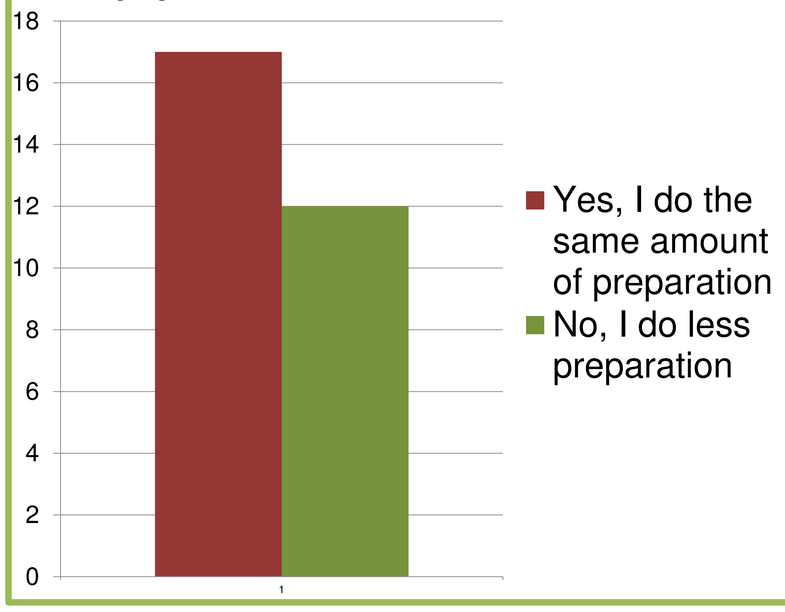
How much do you value the instant feedback from phase tests?



"They spread the assessment marks in small chunks throughout the year"

"Sometime I found mock Phase Test would prepare me better as I am not too familiar with Phase Tests"

Do you prepare for a phase test in the same way you would prepare for a paper based assessment?



Outcomes

Staff:

"Write the questions well in advance and upfront as this process is very time intensive"

Staff were interviewed to explore staff perceptions of how students engage with tests and the practicality and pedagogical basis for running such tests.

- Staff were sceptical of student motivation towards Phase Tests, believing that students considered them to be an 'easy option' for staff, although the student questionnaire results revealed that this was not the case.
- Phase Tests were considered invaluable for providing students with deeper learning and engagement from an early stage.
- Staff emphasised that although Phase Tests reduce workload in terms of marking, the process of developing a pool of questions is very time consuming.

The discussions with staff were combined with the students' results to develop practical guidance on best practice implementation of Phase Tests.

Examples of practical guidance on best practice implementation of Phase Tests

- Do not underestimate the length of time it will take to prepare the questions.
- Students will engage with the learning of the module if Phase Tests are stepped throughout the year.
- Negative questions may be appropriate to students learning.
- Get to know the IT system well.

Conclusion

E-assessment:

- is not a "cheap" substitute for alternative methods of assessment.
- needs to be carefully marketed to students and needs to demonstrate its learning worth for each individual.
- has the potential to provide alternative methods of assessment that can provide valuable and timely feedback, deepen the student learning, increase student motivation to learn, and encourage student reflection of their learning.
- requires careful consideration, planning and development as an integral component of the overall learning strategy.

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